MODS Productivity Data

I. PREFACE

A. Purpose and Content

USPS-FY20-23 provides FY2020 productivity data for selected operations at plants, Network Distribution Centers (NDCs, formerly Bulk Mail Centers or BMCs), and Remote Encoding Centers (RECs).

B. Predecessor Documents

The most recent predecessor document was USPS-FY19-23 in Docket No. ACR2019.

C. Corresponding Non-Public Document

There is no corresponding non-public document.

D. Methodology

The FY2020 productivity calculations use the same methodology as USPS-FY19-23. The productivities for plant and NDC operations employ data from the Management Operating Data System (MODS). The calculations follow the general approach from Docket No. R2006-1, USPS-LR-L-56, Part III, as modified in Docket No. RM2012-2, Proposals Sixteen and Seventeen (approved in Commission Order No. 1383) and Docket No. RM2014-1, Proposal Eight (approved in part in Commission Order No. 1877).

USPS-FY20-23 reports FY2020 productivity statistics for MODS manual letter and manual flat operations computed by the Commission's approved method. However, as noted in the Postal Service's response to Docket No. RM2018-1, Commission Information Request No. 1, PP3-1(a), filed December 4, 2017, the methodology for determining manual letter and flat workloads changed in FY2016. The Postal Service eliminated facility-specific physical surveys to determine flow percentages from automation to manual operations for the imputation of manual workloads. A Lean Six Sigma effort replaced the facility-specific factors with national factors derived from allowances in the Mail Processing Variance (MPV) system as of the start of FY2016. The MPV-based allowances represented maximum fractions of automated workload for which facilities could receive credit rather than actual fractions from which unbiased estimates of actual workloads could be derived, at least at the national level.

In FY2016, FY2017, FY2018, FY2019, and FY2020 measured manual flat productivities decreased significantly compared to prior years, implying that the

national factors underestimate flat workloads relative to the site-specific factors, while manual letter productivities increased overall. No operational factors account for such changes, and several manual letter and flat productivities have implausibly high or low levels since the change of methodology. Thus, the MODS conversion change unfortunately has made the affected manual letter and manual flat productivities sufficiently unreliable since the beginning of FY2016 that the Postal Service cannot recommend their use over the previous FY2015 data. The FY2015 manual letter and flat productivities employed in downstream folders are shown in the table below. While the Postal Service has studied potential alternative sources for manual distribution productivities, it has not yet identified reliable replacements for the affected MODS data.

FY2015 Manual Letter and Flat Productivities

Group	Description	Shape	TPF/Hour	TPH/TPF
14	Manual Out Primary	Letters	614	1.000
15	Manual Out Secondary	Letters	1,058	1.000
16	Manual In MMP	Letters	1,180	1.000
17	Manual In SCF/Primary	Letters	1,076	1.000
18	Manual In Secondary	Letters	792	1.000
57	Manual Out Primary	Flats	600	1.000
58	Manual Out Secondary	Flats	475	1.000
59	Manual In MMP	Flats	671	1.000
60	Manual In SCF	Flats	581	1.000
61	Manual In Primary	Flats	729	1.000
62	Manual In Secondary	Flats	241	1.000

Source: Docket No. ACR2015, USPS-FY15-23, YRscrub2015.xlsx

The Postal Service notes that productivities for mechanized and automated operations, and for manual parcel operations, are unaffected by the MODS manual letter and flat survey change. Automated and mechanized operations' workloads are derived from direct piece counts tabulated by the processing equipment and reported via webEOR. MODS manual parcel operations derive workload from piece counts based on mail processing scans.

Productivities for Remote Encoding Center (REC) operations are based on image volumes and console hours from the WebROADS system, adjusted for "overhead" workhours included in the MODS workhour total.

E. Input/Output

The productivity data are used in USPS-FY20-10, USPS-FY20-11, and USPS-FY20-15. Additionally, the console hours used to develop the REC productivities are used in USPS-FY20-7 (and USPS-FY20-NP18) to assign LDC 15 REC labor costs to cost pools.

II. ORGANIZATION

The productivity data are presented in the Microsoft Office Excel workbooks ‘YRscrub2020.xlsx’, 'NDCscrub2020.xlsx', 'RECProds2020.xlsx’.

Table 1. FY2020 MODS Productivities for Selected Plant Operations

Group	Description	Shape	TPF/Hour	TPH/TPF
4	LCREM	Letters	2,321	1.000
5	Tray Sortation Outgoing	Letters	84	0.818
6	Tray Sortation Incoming	Letters	75	0.870
7	Out BCS Primary	Letters	7,702	0.965
8	Out BCS Secondary	Letters	8,725	0.966
9	In BCS MMP	Letters	5,798	0.971
10	In BCS SCF/Primary	Letters	7,282	0.966
11	In BCS Secondary (1 Pass)	Letters	12,422	0.966
12	In BCS Secondary (2 Pass)	Letters	7,609	0.988
14	Manual Out Primary*	Letters	240	1.000
15	Manual Out Secondary*	Letters	560	1.000
16	Manual In MMP*	Letters	3,069	1.000
17	Manual In SCF/Primary*	Letters	2,103	1.000
18	Manual In Secondary*	Letters	308	1.000
21	AFSM100 Out Primary	Flats	1,440	0.964
22	AFSM100 Out Secondary	Flats	2,062	0.964
23	AFSM100 In MMP	Flats	1,040	0.976
24	AFSM100 In SCF	Flats	1,316	0.979
25	AFSM100 In Primary	Flats	923	0.970
26	AFSM100 In Secondary	Flats	1,415	0.979
27	AFSM100 ATHS Out Primary	Flats	1,784	0.965
28	AFSM100 ATHS Out Secondary	Flats	2,462	0.961
29	AFSM100 ATHS In MMP	Flats	1,677	0.976
30	AFSM100 ATHS In SCF	Flats	1,706	0.978
31	AFSM100 ATHS In Primary	Flats	1,290	0.976
32	AFSM100 ATHS In Secondary	Flats	1,445	0.977
33	AFSM100 AI Out Primary	Flats	1,648	0.956
34	AFSM100 AI Out Secondary	Flats	1,543	0.972
35	AFSM100 AI In MMP	Flats	1,739	0.974
36	AFSM100 AI In SCF	Flats	2,051	0.974
37	AFSM100 AI In Primary	Flats	785	0.973
38	AFSM100 AI In Secondary	Flats	1,816	0.975
39	AFSM100 ATHS/AI Out Primary	Flats	2,349	0.957
40	AFSM100 ATHS/AI Out Secondary	Flats	3,645	0.964
41	AFSM100 ATHS/AI In MMP	Flats	2,971	0.970
42	AFSM100 ATHS/AI In SCF	Flats	2,547	0.971
43	AFSM100 ATHS/AI In Primary	Flats	2,781	0.953
44	AFSM100 ATHS/AI In Secondary	Flats	3,424	0.975
45	UFSM1000 Outgoing	Flats	0	0.000
46	UFSM1000 Incoming	Flats	0	0.000

57	Manual Out Primary*	Flats	191	1.000
58	Manual Out Secondary*	Flats	133	1.000
59	Manual In MMP*	Flats	526	1.000
60	Manual In SCF*	Flats	342	1.000
61	Manual In Primary*	Flats	123	1.000
62	Manual In Secondary*	Flats	147	1.000
63	Manual In	Parcels	120	0.982
64	APBS Outgoing	Bundles	286	0.885
65	APBS Incoming	Bundles	179	0.904
67	LIPS Incoming	Bundles	277	1.000
68	APPS Outgoing	Bundles	255	0.877
69	APPS Incoming	Bundles	211	0.888
70	Manual Outgoing	Parcels	94	0.994
75	PARS WASTE MAIL	Letters	2,944	1.000
76	PARS MANUAL DISTRIBUTION	Letters	960	1.000
77	CIOSS RTS IMAGE LIFT MODE	Letters	745	0.812
78	CIOSS INTERCEPT LABEL MODE	Letters	5,670	0.923
79	CIOSS FORWARDS IMAGE LIFT MODE	Letters	497	0.967
80	CIOSS REVERSE SIDE SCAN	Letters	7,271	0.883
81	CIOSS RESCAN MODE	Letters	4,187	0.978
82	CIOSS OTHER MODE	Letters	4,905	0.926
83	CIOSS INTERCEPT IMAGE LIFT MODE	Letters	7,138	0.979
84	CIOSS FORWARDS LABEL MODE	Letters	4,793	0.731
85	CIOSS RTS LABEL MODE	Letters	5,197	0.477
86	FSS	Flats	663	0.893

Source: USPS-FY20-23, YRscrub2020.xlsx
* FY2020 data not recommended for use, see Methodology

Table 2. FY2020 MODS Productivities for Selected NDC Operation Groups

Group	Total TPF	Total TPH	Total Hours	TPF/Hour
PPSM	258,216,406	242,299,846	634,543	407
SPSM	951,964,255	881,555,006	3,024,352	315
SSM	15,267,290	14,053,959	167,049	91
NMO/Manual Parcels	26,229,370	26,229,370	412,110	64
Outgoing Pouching	11,283,755	11,283,755	59,982	188

Source: USPS-FY20-23, NDCscrub2020.xlsx

Table 3. FY2020 Remote Encoding Center Productivities

Product	Images Keyed	Console Hours	Productivity (images per console hour)	Productivity Adjusted for Overhead
APPS	602,357,078	667,579	902	773
Flats	64,580,330	71,792	900	771
Letters	161,479,521	212,903	758	650
COA	23,704,997	141,579	167	143
PARS	496,839,520	449,465	1,105	947
Total	**1,348,961,446**	**1,543,318**	**874**	**749**

Source: USPS-FY20-23, RECprods2020.xlsx

III. PROGRAM DOCUMENTATION

A. Mail Processing Plant Productivities

Program: **modsprod_FY20.do** – Stata program that computes plant productivity statistics reported in YRscrub2020.xlsx.

First, the MODS data are merged with datasets indicating assignments of 3-digit MODS operations to operation groups, and identifying the MODS facilities and NDCs whose data are used in the productivity calculations. TACS default operations are screened prior to further aggregation.[1] The 3-digit operation-level data are summed (collapsed) to operation group. The TPF variable is replaced with TPH in cases where TPH is greater than TPF, which serves to transfer manual TPH into the TPF variable.[2] Subsequent calculations employ TPF for all operation groups.

The observation-level productivity (prod1) is calculated as the ratio of TPF to workhours by site, operation group, and month. Observations with zero workhours and/or TPF are eliminated by dropping observations with zero or missing values of prod1. The first and 99th percentiles of the productivity distributions for each operation group are computed, and observations in the top and bottom one percent tails of the productivity distributions are eliminated as outliers. Finally, the program computes group sums of TPF, TPH, and workhours over observations remaining after the screening steps. The productivity is the ratio of the sum of screened TPF to the sum of screened workhours. An Excel output file is created for subsequent importation into the YRscrub2020.xls Excel spreadsheet.

Productivities for groups 3, 20, 73, and 74 (REC productivities) are obtained from REC operating data reported in the WebROADS system, and thus are not reported in the spreadsheet; see Section C, below.

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[1] TACS designates certain 3-digit operation numbers as default operations. These operations accumulate workhours in operations where the designated activity may not actually be present, and the workhours assigned to the affected operations 'by default' tend to be large relative to the 'true' data. Prescreening reduces the potential for the default workhours to bias the affected productivities downward.

[2] For manual operations, MODS reports zero TPF for all observations. Historically, TPH values greater than TPF were relatively rare anomalies in MODS data for automated operations. (Since TPH is defined as TPF less rejects, TPF should always be at least as great as TPH.) Automated entry of end-of-run data into MODS via WebEOR effectively eliminated these anomalies.

Input: **opmap20.xlsx** - Map of MODS operations to operation groups used in the productivity analysis, in Excel workbook
finlist20.xlsx – Map of finance numbers to site IDs used in the productivity analysis
ndc_fins20.dta – Stata dataset with list of NDC and ASF finance numbers (unchanged from FY2019)
MODS_MONTH_FY20.csv - Monthly FY 2020 MODS TPF, TPH, and workhour data by month, finance number, and operation, as comma-separated text file

Output: **mods2020prod_merged.dta** – Stata dataset (by operation, month, and finance number) merging FY 2020 MODS data, operation-to-group, and finance number maps
mods2020prod_prescreeen.dta – Stata dataset containing FY 2020 MODS data by site ID, month and operation prior to screening, for operations included in the productivity groups
mods2020prod_prescreeen.xlsx – Excel version of the Stata dataset of the same name
MODSprod2020.xlsx – Excel workbook with FY2020 screened TPH, TPF, hours, productivity (TPF/hour) and TPH/TPF ratios, by operation group; YRscrub2020.xlsx reformats these data.
MODSprod2020_addl_stats.xlsx – Excel workbook with additional summary statistics for unscreened FY2020 data; see Docket No. ACR2015, response to ChIR No. 7, Question 21(a).

B. NDC Productivities

Program: **ndcprod_FY20.do** – Stata program that computes productivity statistics, reported in NDCscrub2020.xlsx, for the following operation groups: PPSM, SPSM, SSM, NMO/Manual Parcels, and Outgoing Pouching.

The data processing procedures for the NDC operation groups are substantially identical to those described above for program modsprod_FY20.do.

Input: **mods2020prod_merged.dta** – Stata dataset of MODS data, produced in modsprod_FY20.do (see above)

Output: **ndc2020prod_prescreen.dta** - Stata dataset containing FY 2020 data by site ID, month and operation group prior to screening

ndc2020prod_prescreen.xlsx – Excel version of the Stata dataset of the same name
NDCprod2020.xlsx - Excel workbook with FY2020 screened TPH, TPF, hours, productivity (TPF/hour) and TPH/TPF ratios, by operation group; NDCscrub2020.xlsx reformats these data.

C. REC Productivities

Spreadsheet: **RECprods2020.xls** – Excel spreadsheet containing Remote Encoding Center (REC) productivities for APPS, Flat, Letter, COA, and PARS images for FY2020. Productivities calculated from WebROADS images and console hours are adjusted for overhead (e.g., on-the-clock breaks) using MODS hours.